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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,916	08/21/2003	Clifford A. Horwitz	SAMS003/01US	6487

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EXAMINER	
NGUYEN, NAM V	
ART UNIT	**PAPER NUMBER**
2635	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,916	HORWITZ ET AL.	
	Examiner	Art Unit	
	Nam V. Nguyen	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-35 and 38* is/are rejected.

7)☒ Claim(s) *36 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/21/03; 1/11/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The application of Horwitz et al. for a "system for multi-standard RFID tags" filed August 21, 2003 has been examined.

This application is a CON of 09/477,478 filed January 06, 2000, now US# 6,617,962.

A preliminary amendment to the claims 1-17 has been entered and made of record. Claims 1-17 are cancelled. The new set of claims 18-38 are introduced.

Claims 18-38 are pending.

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

In Figure 1, the drawings are objected to because in "Interrugator" should be "interrogator".

The drawings are objected to because in Figure 3(a) show Tag (2) and a Reader Frequency Module (12). Is the Tag (2) is part of Figure 3(a)? If it is, the detail description for Figure 3(a) is incorrect and need to show the relationship of the two drawing interaction.

In Figure 4(a), the drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "108" and "109a" have both been used to designate amplifier and

reference characters "106" and "107a" have both been used to designate mixer proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18, 22-24, 34-35 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Lauro et al. (US# 5,604,486).

Referring to claim 18, 34-35 and 38, Lauro et al. disclose a RF tagging system with multiple decoding modalities as claims 18, 34-35 and 38. See Figures 1, 3 and respective portions of the method.

Lauro et al. disclose an interrogator (80) (i.e. a RF tag reader) for a radio identification system having a plurality of tags (10 and 30) (column 5 line 54 to column 6 line 2; see Figures 1 and 3), the plurality of tags including a first subset of tags operating only within a first frequency band, the first subset of tags excluding each tag from the second subset of tags (column 2 lines 11 to 29; column 4 lines 23 to 44; column 10 lines 3 to 46; see Figures 1 to 4),

said interrogator (80) (i.e. a RF tag reader) comprising:

(a) a first radio frequency module (86) (i.e. dithered transmitter antenna #1) having a transmitter (i.e. antenna #1) configured to transmit an output signal at a first frequency to the first subset of tags (column 8 lines 47 to 60), the first radio frequency module including a receiver (88) (i.e. dithered receiver antenna #2) configure to receive return signal transmitted by the first subset of tags operating at the first frequency, the first frequency being within the first frequency band, the transmitter of the first radio frequency module being operable over the first frequency band (column 9 lines 1 to 8);

(b) a second radio frequency module (86) (i.e. dithered transmitter antenna #2) having a transmitter (i.e. antenna #2) configured to transmit an output signal at a second frequency to the second subset of tags (column 8 lines 47 to 67), the second radio frequency module including a receiver (88) (i.e. dithered receiver antenna #2) configure to receive return signal transmitted by the second subset of tags operating at the second frequency, the second frequency being within the second frequency band different from the first frequency band (column 6 lines 3 to 31), the transmitter of the second radio frequency module being operable over the second frequency band (column 4 lines 4 to 10; column 9 lines 1 to 15);

(c) a controller module (82) coupled to said first (86) (i.e. dithered transmitter antenna #1) and second radio frequency modules (86) (i.e. dithered transmitter antenna #2) (see Figure 3) (column 8 lines 47 to 60), said controller module (82) including a controller configured to control the transmitter (86) (i.e. dithered transmitter antenna #1) associated with the first frequency and the transmitter (i.e. dithered transmitter antenna #2) associated with the second frequency, the controller module including a decoder (18,20, and 22) (i.e. group of decoder RF

resonant circuits) configured to decode return signals received from said tags (10) (column 5 line 64 to column 6 lines 43; column 12 lines 5 to 26; see Figures 1 to 4).

Referring to claim 22, Lauro et al. disclose the interrogator as claimed in claim 18, wherein said first (86) (i.e. dithered transmitter antenna #1) and second radio frequency (86) (i.e. dithered transmitter antenna #2) are coupled to said controller (82) through a bus (column 8 lines 12 to 21; see Figure 3).

Referring to claim 23, Lauro et al. disclose the interrogator as claimed in claim 22, the plurality of tags including a third subset of tags operating only within a third frequency band (i.e. antenna #3), the third subset of tags excluding each tag from the first subset of tags and each tag from the second subset of tags, the interrogator further comprising:

A third radio frequency module having a transmitter (i.e. dithered transmitter #3) configured to transmit an output signal at the third frequency to the tags, the third radio frequency module having a receiver (i.e. dithered receiver antenna #3) configured to receive return signals transmitted by tags operating at the third frequency (column 12 lines 5 to 26).

Referring to claim 24, Lauro et al. disclose the interrogator as claimed in claim 23, the plurality of tags including a third subset of tags operating only within a third frequency band (i.e. antenna #4), the third subset of tags excluding each tag from the first subset of tags and each tag from the second subset of tags, the interrogator further comprising:

A third radio frequency module having a transmitter (i.e. dithered transmitter #4) configured to transmit an output signal at the third frequency to the tags, the third radio frequency module having a receiver (i.e. dithered receiver antenna #4) configured to receive return signals transmitted by tags operating at the third frequency (column 12 lines 5 to 26).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 19 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauro et al. (US# 5,604,486) as applied to claim 18 above, in view of Marsh et al. (US# 5,519,381).

Referring to claim 19, Lauro et al. disclose the interrogator as claimed in claim 18, however, Lauro et al. did not explicitly disclose wherein the decoder includes a signal divider configured to divide the return signal into multiple channels and a converter configured to produce pulses based on the return signals.

In the same field of endeavor of detecting multiple tags, Marsh et al. teach that the decoder (76 and 82) includes a signal divider configured to divide the return signal into multiple channels (column 6 lines 34 to column 7 line 3; column 8 lines 14 to 26) and a converter

configured to produce pulses based on the return signals (column 8 lines 27 to 37; see Figures 9-11) in order to extract the codes contained in the received transponder signals and to feed the codes to the microprocessor.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add the circuit to dividing the return signals into multiple channels and converting said return signals into pulses of Marsh et al. to the multiple frequency receiver of the RF tag reader of Lauro et al. because Lauro et al. suggest that receiving and operating at different frequency bands and Marsh et al. teach that the interrogator operates at multiple channels and the signals in the pulses of each frequency bands (column 8 lines 15 to 46) in order to have strong signals to analyze the received signals. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the circuit to dividing the return signals into multiple channels and converting said return signals into pulses of Marsh et al. to the multiple frequency receiver of the RF tag reader of Lauro et al. with the motivation for doing so would have been to provide the a higher amplification gains for the microcomputer controller to analyze the received signal in order to have a reliable RF tag reader.

Referring to claim 29, Lauro et al. in view of Marsh et al. disclose the interrogator as claimed in claim 19, Marsh et al. disclose wherein each transmitter (68) includes an antenna (58) (column 6 lines 34 to 40) configured to transmit its output signal in response to a control signal from controller (74) (column 6 lines 40 to 48).

Referring to claim 30, Lauro et al. in view of Marsh et al. disclose the interrogator as claimed in claim 29, Marsh et al. disclose wherein the divider includes a circulator (88, see Figure 9) having an input port coupled to the antenna (58, 60, or 62) and an output port for each of said channels (column 6 lines 49 to 64).

Referring to claim 31 Lauro et al. in view of Marsh et al. disclose the interrogator as claimed in claim 30, Marsh et al. disclose wherein the divider includes a mixer (92, see Figure 10) and an amplifier (96) for each of the channels (frequencies), each of the mixers (92) having an input coupled to the respective output port (E) of the circulator (100) and an output coupled to the respective amplifier (102) for the channel (column 6 line 65 to column 7 lines 12), the output of each of amplifiers is coupled to a converter configured to convert the return signals into pulses for the channel (column 8 lines 27 to 37).

Referring to claim 32, Lauro et al. in view of Marsh et al. disclose the interrogator as claimed in claim 31, Marsh et al. disclose wherein the converter includes a pulse shaping circuit for each of the channels (column 8 lines 27 to 51 and see Figure 11).

Referring to claim 33, Lauro et al. in view of Marsh et al. disclose the interrogator as claimed in claim 32, Marsh et al. disclose wherein said pulse shaping circuit (90) includes an isolated output port coupled to a bus connected to the controller (see Figure 9).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauro et al. (US# 5,604,486) in view of Marsh et al. (US# 5,519,381) as applied to claim 19 above, and in further view of Nysen (US# 6,107,910).

Referring to claim 20, Lauro et al. in view of Marsh et al. did not explicitly disclose the interrogator as claimed in claim 19, wherein said decoder means includes synchronization means for synchronizing the frequency of said pulses and means for extracting information from said pulses according to a protocol associated with the tag transmitting the return signal.

In the same field of endeavor of detecting multiple tags, Nysen teaches that wherein said decoder means includes synchronization means for synchronizing the frequency of said pulses and means for extracting information from said pulses according to a protocol associated with the tag transmitting the return signal (column 9 lines 4 to 16 and column 39 line 51 to 56).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the decoder means includes synchronization and means for extracting information of Nysen to the decoder of Lauro et al. in view of Marsh et al. because Marsh et al. suggest that using a decoder for decoding said return signals received from said tags and Nysen teaches decoder means includes synchronization means for synchronizing the frequency of said pulses and means for extracting information from said pulses according to a protocol associated with the tag transmitting the return signal . Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine the decoder of Nysen into the detection of multiple articles of Lauro et al. in view of Marsh et al. with the motivation

for doing so would have been to provide a decoder operates with a relatively different frequencies.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauro et al. (US# 5,604,486) in view of Marsh et al. (US# 5,519,381) and in view of Nysen (US# 6,107,910) as applied to claim 20 above, and in further view of Steeves (US#6,034,603).

Referring to claim 21, Lauro et al. in view of Marsh et al. and Nygen disclose the interrogator as claimed in claim 20. However, Lauro et al. in view of Marsh et al. and in view of Nygen did not explicitly disclose wherein said decoder means further includes code checking means for checking said pulses and means for selecting the channel without code violations.

In the same field of endeavor of detecting multiple RFID tags, Steeves discloses that code checking means for checking said pulses and means for selecting the channel without code violations (column 7 lines 32 to 47).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the error checking of Steeves into the multiple frequencies transmitter of Lauro et al. in view of Marsh et al. and Nysen because Marsh et al. suggest that the need to verify that the code is a valid number by means of CRC checking (column 9 lines 28 to 35) is so desired and Steeves teaches that the reader unit to error checking occurs using other more conventional error correction techniques. Therefore, it would have been obvious to a person of ordinary skill in the art to combine the error checking techniques of Steeves into the multiple frequencies transmitter of Lauro et al. in view of Marsh et al. and Nysen with the motivation

being to provide any intermittent lost or invalid bits due to noise or collision in the transmission channel that were reconstructed can be re-verified.

Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauro et al. (US# 5,604,486) as applied to claim 24 above, and in view of Lanzl (US# 6,353,406).

Referring to claims 25-28, Lauro et al. disclose the interrogator (80) as claimed in claim 24, however, Lauro et al. did not explicitly disclose the interrogator (80) wherein said first frequency falls in a range 100 to 200 KHz, second frequency is substantially 13.56 MHz, third frequency range 458 to 917 MHz and fourth frequency is substantially 2.45 GHz. Lauro et al. disclose that the RF tags system operates in a narrow frequency bands and wide frequency bands.

In the same field of endeavor of detecting multiple RFID tag types, Lanzl et al. disclose that wherein said first frequency falls in a range 100 to 200 KHz (column 41 lines 23 to 32), second frequency is substantially 13.56 MHz (column 42 lines 13 to 22), third frequency range 458 to 917 MHz (column 7 lines 7 to16) and fourth frequency is substantially 2.45 GHz (column 30 lines 37 to 47).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the multiple antenna modules generate a carrier signals of Lanzl et al. into the multiple frequency bands signal of transmitter and receiver of Lauro et al. because Lauro et al. suggest that the radio frequency interrogator system operates at multiple frequency range from narrow frequency band to wide frequency band is so desired (column 12 lines 5 to 26) and Lanzl et al. teach that a system can operated at multiple frequency range from 100 KHz to 2.45 GHz of

four bands in order to have different distance range tag. Therefore, it would have been obvious to a person of ordinary skill in the art to use the multiple antenna modules generate a carrier signals of Lanzl et al. into the multiple frequency bands signal of transmitter and receiver of Lauro et al. with the motivation being to provide a different frequency mode system that is very flexible and easy to support different frequency bands tags.

Allowable Subject Matter

Claims 36-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claim 36, the following is a statement of reasons for the indication of allowable subject matter: the prior art fail to suggest limitations wherein the first RF module is configured to receive a return signal modulated according to a first protocol from a plurality of protocols; and the second RF module is configured to receive a return signal modulated according to a second protocol from a plurality of protocols.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kruger et al. (US# 6,480,143) disclose an electronic identification system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam V Nguyen whose telephone number is 571-272-3061. The examiner can normally be reached on Mon-Fri, 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 571-272-3068. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nam Nguyen
August 22, 2005

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